The Bureau of Educational and Cultural Affairs (ECA) of the U.S. Department of State administers a number of exchange and training programs that help promote knowledge about the United States and mutual international understanding. As part of it activities, ECA maintains connections with its exchange participants, or "alumni," after they complete their programs. As part of a broad range of incentives that help keep alumni in touch with ECA, the Bureau administers the State Alumni website (https://alumni.state.gov), an online community by and for alumni of U.S. Government exchange programs.

Transcript of Q & A Live Event with Pavel Vinogradov and Jeff Williams from the State Alumni website. The views expressed here are those of the guest and participants and do not necessarily reflect U.S. Government policy.

Pavel Vinogradov and Jeff Williams

Q&A Live with Cosmonaut and Astronaut on the International Space Station

Expedition 13 Commander, Pavel Vinogradov, and Flight Engineer and NASA Science Officer, Jeffrey Williams, onboard the International Space Station joined us live to answer alumni questions Tuesday, June 6, 2006, at 1:20pm EDT (17:40 GMT). Please reference worldtime clock to convert this time to your zone.

Cosmonaut Vinogradov and Astronaut Williams dictated their answers into a camera with a live feed to NASA TV available at http://www.nasa.gov. The questions and answers also appear as a typed web chat below.

Moderator:
Cosmonaut Vinogradov and Astronaut Williams will dictate their answers into a camera with a live feed to NASA TV available at http://www.nasa.gov (click on "Watch NASA TV"). The questions and answers will appear below live as well as a typed web chat. [June 6, 2006 10:48]

Moderator:
Station, this is State Alumni Global Community, can you hear us? [June 6, 2006 10:50]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

Global Community, we have you loud and clear and we are ready for your questions! [June 6, 2006 10:50]

Moderator:
Great, hi! I'm Alex Broughton, and on behalf of the US Department of State I'd like to thank both of you for agreeing to answer questions from US Government exchange program participants! [June 6, 2006 10:50]

From Jordan :
Over which country or part of the Earth are you over right now? and what is your speed relative to Earth? How long does it take to fly around?
[June 6, 2006 10:51]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

Our speed around the earth is about 17,500 miles an hour; currently we are in the north Pacific just off of Alaska, just off the coast of California, and will be going down across the southern part of South America. It takes 90 minutes to orbit the Earth one time, so every hour and a half we go around the Earth. [June 6, 2006 13:22]

From Russia :
Often you work in multicultural teams. Do you experience any cultural or language barriers? If you do, how do you cope with them and do you have any interesting stories to share? [June 6, 2006 10:51]

Pavel Vinogradov and Jeff Williams :
Cosmonaut Vinogradov:

At this time different crews are from different countries, and we have different types of educational backgrounds, but the crew is first and foremost a team, like one organism, one person -- only then can the people be truly called a crew. So we don't have any real barriers or differences -- we work as a team. And we do use different languages, and we learn English and Czech and Russian and they actually talk in a

mixture, not quite English, not quite Russian. [June 6, 2006 13:23]

Maria From Mexico :
(Moderator's note: this question came in from an alumna in Mexico as well as an alumnus in Colombia and an alumnus in Bangladesh)

Hello, I am the script-writer for a radio show in Mexico, "Las Redes del Tiempo" ("The Nets of Time"). We always have news about the ISS and this is a question from our listeners in Guadalajara and Mexico City:

What new contributions to science are you making in this expedition? and How can people in developing countries benefit from your research in Space which is extremely expensive.

[June 6, 2006 10:52]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

It's the history of all exploration -- research and exploration, [research projects] find their payback sometimes years or even decades after the fact. We are doing basic research here, we are doing it across a wide spectrum of applications on the Earth, and it may not have a payback for the "man on the street" if you will, for years or decades. Though some things might have a payback earlier on!

We also have a large focus on exploration beyond the Earth's orbit -- to the Moon and on to Mars. And that entails many things, one of the most important being to understand how we can mitigate the long duration effects of weightlessness, so a lot of the research we are doing is so that we can work on other planets' surfaces.

A lot of the research we are doing is to understand these effects so that we can mitigate the effects and support future space exploration. [June 6, 2006 13:25]

Nabiha From Pakistan :
From seeing the Earth from space do you think that we should raise the awareness level among leaders as well as the general public on the need to take care of the Earth's precious and scarce resources? [June 6, 2006 10:52]

Pavel Vinogradov and Jeff Williams :
Cosmonaut Vinogradov:

You know, we certainly see quite a few phenomena on the Earth. Not always are the phenomena and the result of humanity activities on Earth positive. Unfortunately, pollution of the ocean and the bays where there are a lot of sea-going vessels is the pollution we see. We also see wild fires and various other things that do tell us that we need to evaluate what we do with our planet.

We need to make sure that we take care of it and we need to work on improving the ecological situation -- this should be one of the most important parts of our mission; we [humanity] are kind of guardians for the Earth. We can see from above sometimes what goes unnoticed on the ground. [June 6, 2006 13:27]

Ebi From Nigeria :
Please enlighten us about the feelings and sights associated with a space walk. In which journals are the papers covering Space Station experiments published.
[June 6, 2006 10:52]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

Well, as for what we see on the space walk: as I said before every 90 minutes we orbit the Earth, so we would be able to see most of the Earth during [the 6 hour space walk made earlier this week], it was beautiful -- many sunrises and sunsets, the illuminated parts of the Earth, the arches of the clouds and what not, so its absolutely incredible.

Although most of our attention was spent dedicated to the work we had to do, so we didn't have a lot of time for sight-seeing!

But, as for the journals, I would say the whole spectrum of scientific journals have some subset of science and research that goes on in space exploration. I think that you could pick up any one of these journals and almost every issue you'll see something either directly or indirectly related to space. [June 6, 2006 13:28]

Elena From Tajikistan :
What does it take for a citizen of a former USSR country to become a member of the International Space station? Could you advise on specific schools or trainings to take, be it within Russia or abroad? [June 6, 2006 10:52]

Pavel Vinogradov and Jeff Williams :
Cosmonaut Vinogradov:

Any person can become an astronaut or cosmonaut and I would say that the most important thing here, first and foremost, is the desire and determination of that person. They have to be willing as well as determined, and of course it is extremely important to have good health. You have to have a good education in order for you to specialize in space flight.

In the future I believe there will be quite a range of types of specializations on board spacecrafts, so the most important thing will still be someone's determination. [June 6, 2006 13:30]

esther From Argentina :
My name is Esther Cross, I am an Argentine writer and would like to know if during your childhood you read science-fiction literature. Or, were you influenced in choosing this way of life by any sort of fiction, books or films? How did you decide to dedicate yourselves to this activity? [June 6, 2006 10:52]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

I was always interested in science -- science was my favorite subject. That inspired me to go into the field of engineering after graduating from High School.

I decided to go into the military, specifically the Military Academy at West Point, and that experience is where I read the book "The Right Stuff," by Tom Wolfe, which is a history of test pilots and the early space program and the early astronauts. I think that if I had to pick a book that had inspired me to pursue space flight as a goal, that was it. There were also many people who helped and inspired me to pursue this as a goal. [June 6, 2006 13:31]

Paul From Australia :
This question is from my 8 year old son's third and fourth grade class.

How hot do you get on re-entry?
[June 6, 2006 10:53]

Pavel Vinogradov and Jeff Williams :
Cosmonaut Vinogradov:

This is the most important part of the expedition for all of the crews -- the re-entry and landing. And this part of the flight, the descent when the vehicle goes into the dense air of the atmosphere, is very crucial, and all of the vehicles undergo significant forces and high temperatures. The surface cells of the ship get very hot (over 1500 degrees Centigrade)!

This is a very crucial point for the crew and for all of those who are waiting for the crew to return, and others waiting on the ground. We are very careful and thorough about this stage of the descent. The forces that we feel during the re-entry are significant; we train for that especially, on the ground and aboard the ship. [June 6, 2006 13:33]

Kostyantyn From Ukraine :
At what age did you understand that you wanted to be an astronaut or a cosmonaut? How did it happen? [June 6, 2006 13:33]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

It was while I was a cadet at the academy in West Point that I realized that I too had the potential to apply

and become an astronaut. Prior to that I had never considered that I would have the opportunity to try -- so I was about 19 or 20 years old when I made that decision to set this as a goal. [June 6, 2006 13:33]

Roman From Russia :
Can you describe for us an entire workday of an Astronaut? [June 6, 2006 13:34]

Pavel Vinogradov and Jeff Williams :
Cosmonaut Vinogradov:

It's not entirely unlike what you have for all the people who are starting their workday in a thorough way on Earth. It may be a little longer than on Earth, but our mission control centers always plan our workday and they plan them so that we will be able to accomplish as much as possible.

We wake up at 6 in the morning; we have a hygiene break and then eat breakfast, and we start by discussing our plans for the day.

We end the day at about 7 in the evening when we sum up our workday and what we've been able to accomplish, assess any problems and figure out what we are going to do the next day. This is a normal workday like all of the people on the ground have. [June 6, 2006 13:35]

Tatyana From Kazakhstan :
How do you maintain your physical fitness being in space?
[June 6, 2006 13:35]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

That's a pretty good question! It's important to maintain our physical fitness because in this environment your muscles atrophy and your bones actually atrophy, lose their strength and calcium density. We have several types of equipment on board to exercise.

We have a treadmill where we wear a harness to hold us down so that we can run, we have a bicycle to get our aerobic exercise in, and we have a machine that substitutes as a weight-lifting machine -- it has a series of bunggies, pulleys and ropes. For example, we can do squats, bench presses and other exercises on this machine.

We use all of this equipment to exercise every day to mitigate the atrophying of our muscles and bone. [June 6, 2006 13:36]

From Gaza :
I read that astronomers only know 5% of the mystery in the universe. Is this a fair percentage considering the discoveries made every day and the advancement of technology which improved the process of observation?

Palestinian Fulbright Alumni Association
[June 6, 2006 13:41]

Pavel Vinogradov and Jeff Williams :
Cosmonaut Vinogradov:

Ha ha, I don't really know how much it is that we know about the universe! To tell you frankly it is indeed possible that we only know of about 5% about this universe. I think that here at the International Space Station it is our purpose, that is why we are here, to find out more about this world, the planet and ourselves too. Maybe this is the main mission of us here, and that's why we're in space. [June 6, 2006 13:42]

Moderator:
Okay, we'd all like to thank you very much for speaking to us today and we wish you all the best for the rest of your mission! We know you have work to get back to up there! [June 6, 2006 14:56]

Pavel Vinogradov and Jeff Williams :
Astronaut Williams:

Roger, it's been a pleasure to talk to you and to address all of your questions! [June 6, 2006 14:02]

Moderator:
And thanks to all for participating in this exciting event! We received an overwhelming number of questions and asked as many as possible in the time allotted. [June 6, 2006 14:03]